

KSE210

Feature

- Low Collector-Emitter Saturation Voltage
- High Current Gain Bandwidth Product : $f_T=65\text{MHz}@I_C=-100\text{mA}$ (Min.)
- Complement to KSE200



PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage | - 40 | V |
| V_{CEO} | Collector-Emitter Voltage | - 25 | V |
| V_{EBO} | Emitter-Base Voltage | - 8 | V |
| I_C | Collector Current | - 5 | A |
| P_C | Collector Dissipation ($T_C=25^\circ\text{C}$) | 15 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | - 65 ~ 150 | $^\circ\text{C}$ |

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|-------------------------------------|--------------------------------------|--|----------------|-----------------------|---------------------|
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C = - 10\text{mA}, I_B = 0$ | -25 | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB} = -40\text{V}, I_E = 0$ $V_{CB} = - 40\text{V}, I_E = 0 @ T_J = 125^\circ\text{C}$ | | -100 -100 | nA μA |
| I_{EBO} | Emitter Cut-off Current | $V_{BE} = - 8\text{V}, I_C = 0$ | | -100 | nA |
| h_{FE1} h_{FE2} h_{FE3} | DC Current Gain | $V_{CE} = - 1\text{V}, I_C = - 500\text{mA}$ $V_{CE} = - 1\text{V}, I_C = - 2\text{A}$ $V_{CE} = - 2\text{V}, I_C = - 5\text{A}$ | 70 45 10 | 180 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = - 500\text{mA}, I_B = - 50\text{mA}$ $I_C = - 2\text{A}, I_B = - 200\text{mA}$ $I_C = - 5\text{A}, I_B = - 1\text{A}$ | | -0.3 -0.75 -1.8 | V V V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = - 5\text{A}, I_B = - 1\text{A}$ | | -2.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $V_{CE} = - 1\text{V}, I_C = - 2\text{A}$ | | -1.6 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE} = - 10\text{V}, I_C = - 100\text{mA}$ | 65 | | MHz |
| C_{ob} | Output Capacitance | $V_{CB} = - 10\text{V}, I_E = 0, f = 1\text{MHz}$ | | 120 | pF |

Typical Characteristics

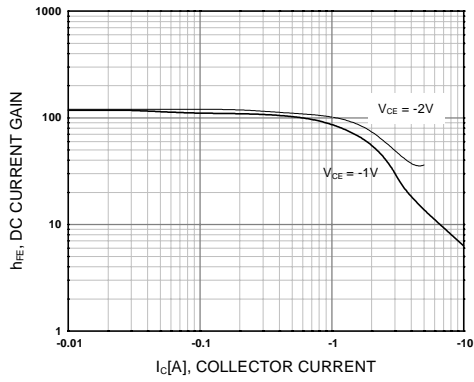


Figure 1. DC current Gain

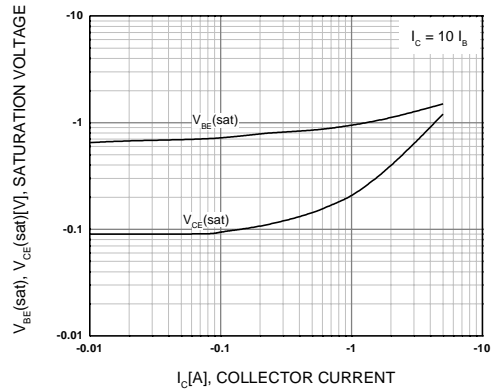


Figure 2. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

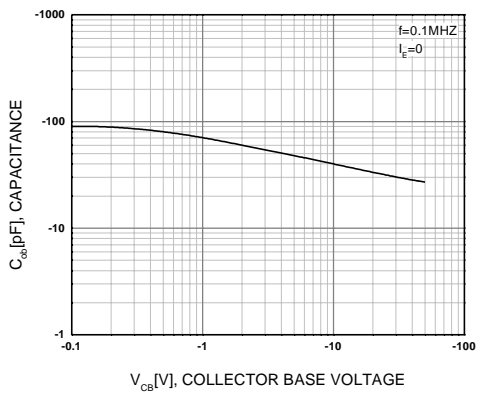


Figure 3. Collector Output Capacitance

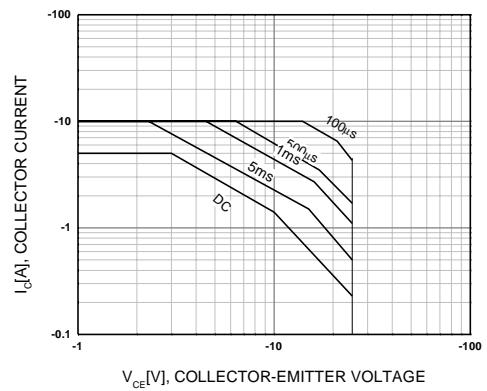


Figure 4. Safe Operating Area

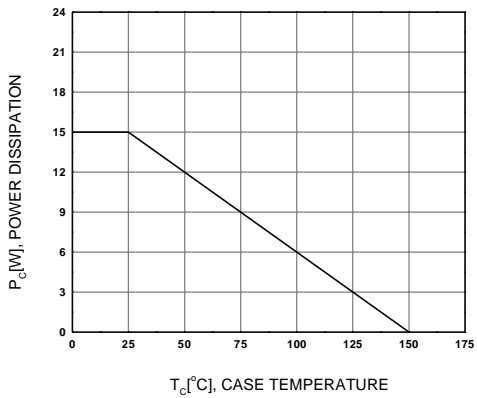


Figure 5. Power Derating

Package Dimensions

KSE210

TO-126



Dimensions in Millimeters

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| Bottomless™ | FAST _r ™ | PACMAN™ | SuperSOT™-6 |
| CoolFET™ | FRFET™ | POP™ | SuperSOT™-8 |
| CROSSVOLT™ | GlobalOptoisolator™ | PowerTrench [®] | SyncFET™ |
| DenseTrench™ | GTO™ | QFET™ | TinyLogic™ |
| DOME™ | HiSeC™ | QS™ | UHC™ |
| EcoSPARK™ | ISOPLANAR™ | QT Optoelectronics™ | UltraFET [®] |
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|--------------------------|------------------------|---|
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